

some rows the lateral tooth has 2.1.5 denticles. The notch at the outer end of the denticle row of the inner uncinus is not so distinct as in *A. robusta*, and the outer uncinus has somewhat finer denticulation (fig. 3).

While related to *A. robusta* (Wkr.) this species is distinct by the more slender shape and smaller aperture. The generic classification of such forms depends upon the form of the verge or external male organ, which is unknown in this species, *A. robusta* and *A. hendersoni*; but for the present they are considered to be Amnicolae of the subgenus *Marstonia* F. C. Baker, type *A. lustrica* Pils.

The eastern "*Paludina*" *nickliniana* Lea is more slender than *A. idahoensis*, with a deeper suture. According to F. C. Baker the verge differs from that of *Paludestrina* and *Hydrobia*, and he has revived for it the name *Stimpsonia* Clessin, 1878. As this is preoccupied in Crustacea and Vermes I propose to substitute *Fontigens*, type *Paludina nickliniana* Lea.

THREE NEW POLYGYRID SNAILS FROM CALIFORNIA

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A very interesting new *Polygyra* which has just come to hand from northern California impels me to submit in connection with it two other forms which I have had in manuscript for a considerably longer period of time.

POLYGYRA TRACHYPEPLA, new species. Pl. 2, figs. 12, 12a.

Description: Shell small, depressed, thin, imperforate. Embryonic whorls with first half-turn smooth and vitreous, the second half-turn less transparent and showing a few weak concentric wrinklings together with a gradually developing system of minute papillae which on succeeding whorls become much larger, elongate, then almost confluent, and eventually somewhat crescentic and bearing more or less deciduous scale-like excrescences above; there is evidence of a double arrangement of these in forward-slanting series on the one hand and approximately axial or con-

centric lines on the other, but it does not proceed quite far enough for the formation of actual ribs; papillae numerous on base of shell as well but there more minute. In cleaned specimens which have lost the scales traces of a weak spiral striation may be observed. Whorls 5, narrow, convex, with the suture deeply impressed. Body-whorl subangulate at the shoulder, strongly tumid below, only slightly descending to the aperture, behind which it is abruptly and narrowly constricted. Aperture ovate, the peristome only moderately thickened, flattened below, and bearing two small whitish denticles, one basal and one above it on the outer lip, in addition to the slightly larger, oblique and high-placed parietal denticle. Color of periostracum snuff brown, the lip pale brown to whitish.

Max. diam. 7.6, min. diam. 7.4, alt. 4.3 mm.

Holotype: Cat. No. 6170 of the writer's collection. *Type Locality*: Vicinity of Bridge Creek Lumber Camp, south of Scotia, Humboldt County, California; James Cunningham collector, July-August, 1926.

Remarks: This species somewhat resembles *germana* but the shell is a trifle larger and flatter, imperforate, and the parietal tooth smaller, while the very different periostracal ornamentation suggests an approach toward *loricata*. I know nothing closely like it in our western fauna.

POLYGYRA LORICATA NORTENSIS, new subspecies. Pl. 2, figs. 14, 14a.

Description: Shell small, depressed, thin, perforate. Whorls $4\frac{3}{4}$ to $5\frac{1}{4}$. Embryonic shell weakly concentrically wrinkled, the wrinkles much broken, soon becoming closer and heavier, and eventually passing into the general sculpture-system of many low, closely placed, crescentic tubercles, trending like the growth-lines which are otherwise hard to make out, and overlying the very close and fine spiral striation. Body-whorl tumid, subangulate at the shoulder, weakly descending and abruptly and deeply constricted behind the lip. Aperture ovate, the peristome hardly thickened except for two small teeth (sometimes not more than whitish thickenings), one basal, the other above it on the outer lip. Parietal tooth a small oblique whitish denticle which may be represented by a mere trace. Umbilicus narrow, nearly straight-walled, partly covered by the peristome. Color of periostracum near tawny-olive of Ridgway.

Max. diam. 6.4 mm., min. diam. 5.6 mm., alt. 3.6 mm., diam of umbilicus 0.5 mm.. Whorls 5.

Holotype: Cat. No. 7456 of the writer's collection. *Paratypes*: Cat. No. 7457 of same collection, and No. 2220, collection of Allyn G. Smith. *Type Locality*: Terwah, near Requa, Del Norte County, California; 5 specimens, Allyn G. Smith, collector, August 4, 1921.

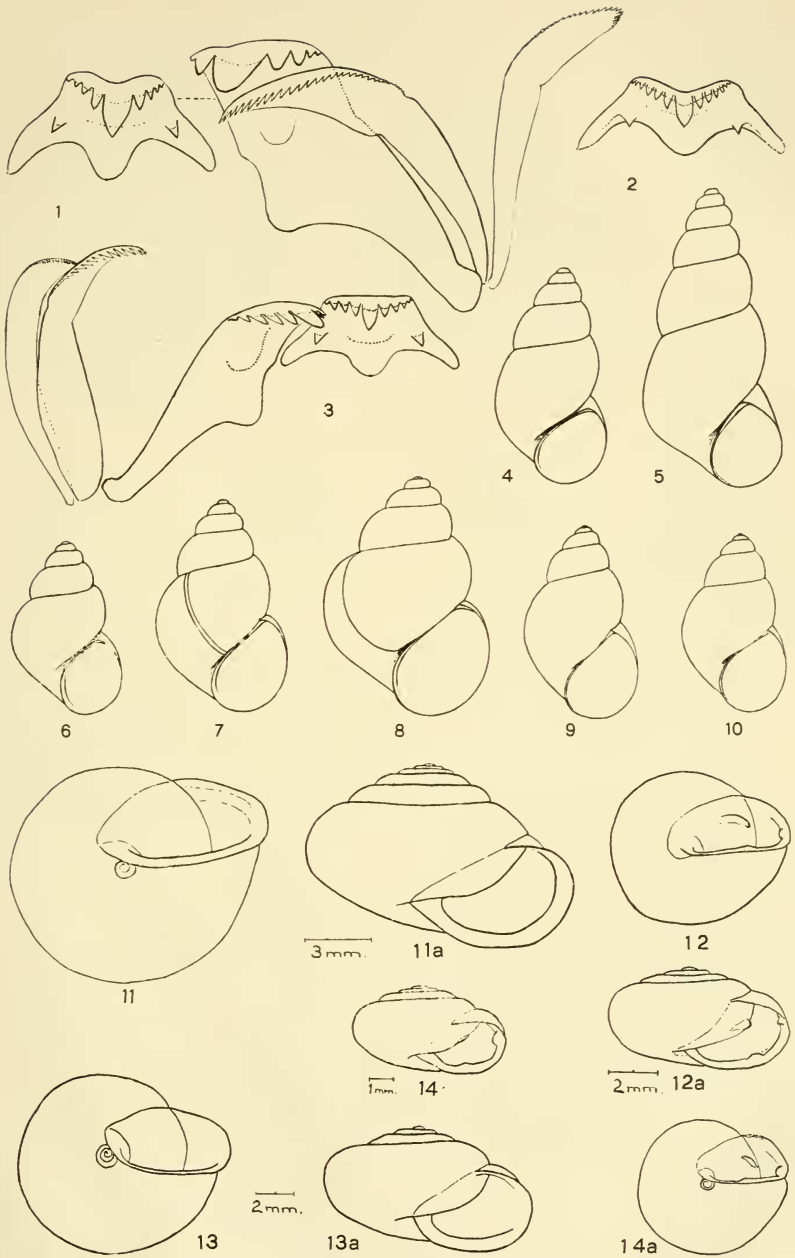
Remarks: This seems a reasonably well defined race differing from typical *loricata* of the San Francisco region in being smaller, with a thinner lip, less open umbilicus, and reduced apertural dentition, the parietal tooth often indeed no more than a trace. The sculpture is altogether finer, more even, and less crude than the rough scaly ornamentation of the typical form.

POLYGYRA HAPLA, new species. Pl. 2, figs. 13, 13a.

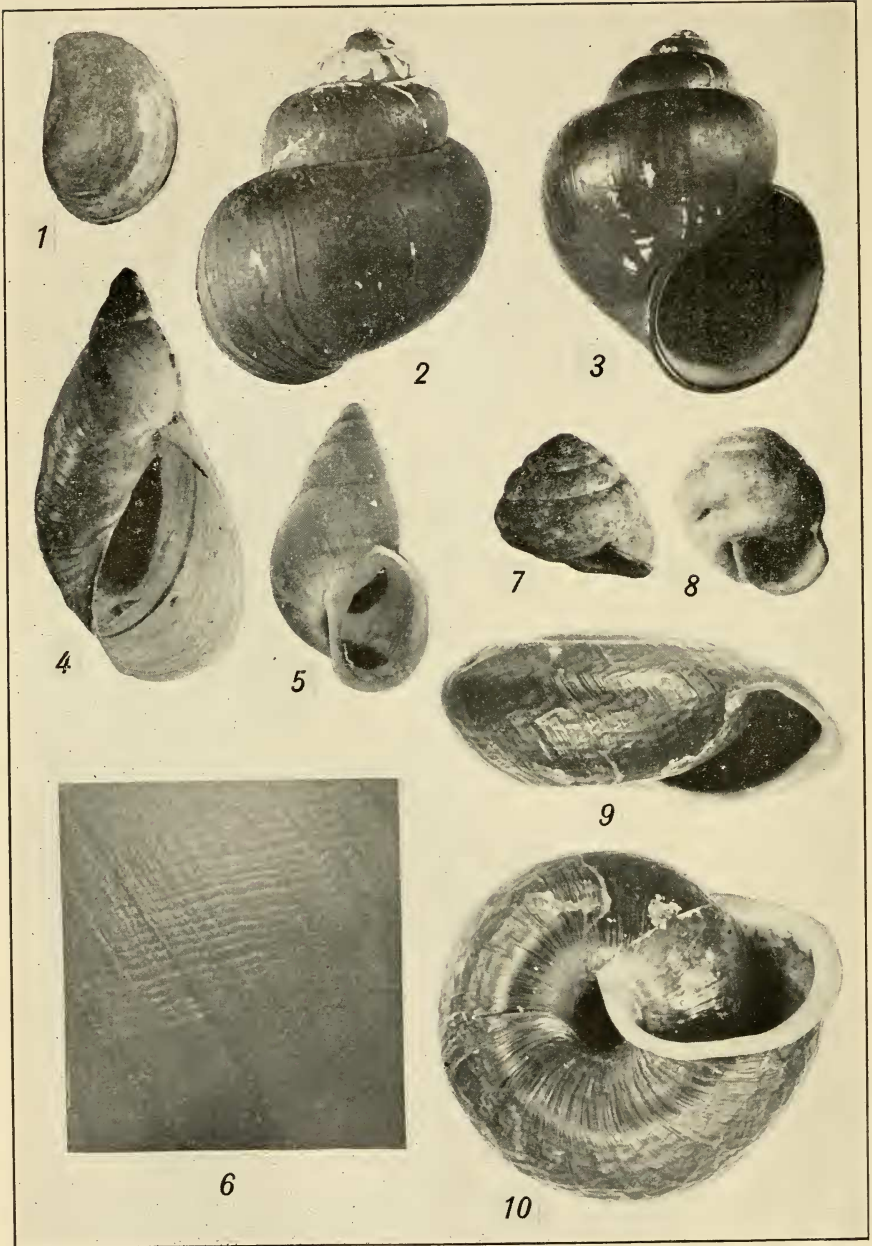
Description: Shell small, depressed-conic, thin. Growth-lines numerous, irregular and somewhat coarse. Embryonic whorls transparent, polished, smooth except for the very weak growth-lines. Later whorls with rather large distant papillae, each bearing a stout periostracal hair when first formed, but the hairs eventually becoming generally dehiscent in the later stages. Spire low, the slopes nearly straight. Whorls about $5\frac{1}{4}$, strongly convex, with deep sutures. Body whorl slightly shouldered, weakly descending to the aperture, and suddenly narrowed just back of the peristome by a furrow-like constriction; base moderately tumid. Lip light brown, rather narrow, well reflected anteriorly and below, but only moderately thickened; angled and slightly narrowed below the pillar. Umbilicus permeable to apex, but narrow, contained 8 to 9 times in the major shell diameter; only slightly encroached upon by the columellar reflection. Color of shell near snuff brown of Ridgway.

Holotype: max. diam. 12.2 mm., min. diam. 10.3 mm., alt. 7.2 mm., diam. umbilicus 1.4 mm.; $5\frac{1}{4}$ whorls. *Paratypes* measure: $11.8 \times 10.1 \times 6.6$ mm., umb. 1.4 mm.; $5\frac{1}{4}$ whorls.; $11.6 \times 9.7 \times 7.2$ mm., umb. 1.4 mm.; $5\frac{1}{4}$ whorls.; $11.4 \times 9.6 \times 6.5$ mm., umb. 1.2 mm.; $5\frac{1}{4}$ whorls.; $11.1 \times 9.3 \times 6.3$ mm., umb. 1.2 mm.; 5 whorls; $10.9 \times 9.2 \times 6.4$ mm., umb. 1.4 mm.; $5\frac{1}{4}$ whorls; $10.3 \times 8.6 \times 6.2$ mm., umb. 1 mm.; $5\frac{1}{4}$ whorls.

Holotype: Cat. No. 7440 of the writer's collection. *Paratypes*: Cat. No. 7436 of same collection. *Type Locality*:



Pilsbry: Amnicolidae from Wyoming and Oregon
 Berry: Polygrid Snails from California



Figs. 1-3. *Viviparus contectoides goodrichi*. 4. *Succinea sanibelensis*.
 5, 6. *Partula paravicinii*. 7, 8. *Cepolis torrei*. 9, 10. *Chloritis atalanta*